

In the Claims:

1. (Withdrawn) A lithography reticle, comprising:

a material having a pattern, the pattern including opaque regions and transparent regions, the pattern comprising a holographic representation of an image, wherein the holographic representation of the image is formed using a Computer-Generated Holography encoding technique.
2. (Withdrawn) The lithography reticle according to Claim 1, wherein the material comprises:

a transparent substrate; and

an opaque material disposed over the substrate, wherein the pattern is formed in the opaque material.
3. (Withdrawn) The reticle according to Claim 1, wherein the holographic representation of an image comprises a holographic fringe pattern.
4. (Withdrawn) The reticle according to Claim 3, wherein the holographic fringe pattern comprises a plurality of small apertures, wherein the apertures do not visually resemble the image in a one-to-one relationship.
5. (Withdrawn) The reticle according to Claim 1, further comprising a phase-shifting material disposed over portions of the material.
6. (Withdrawn) The reticle according to Claim 1, wherein the reticle is transmissive or reflective.

7. (Withdrawn) The reticle according to Claim 1, wherein the material comprises a liquid crystal display or a special light modulator.
8. (Withdrawn) A method of manufacturing a lithography reticle, comprising:
 - providing an image;
 - creating a holographic representation of the image using a local encoding technique (LET);
 - providing a material; and
 - patterning the material with the holographic representation of the image, wherein the patterned material comprises transparent regions and opaque regions.
9. (Withdrawn) The method according to Claim 8, wherein patterning the opaque material with the holographic fringe pattern comprises patterning the opaque material with a plurality of small apertures, wherein the apertures do not visually resemble the image in a one-to-one relationship.
10. (Withdrawn) The method according to Claim 8, wherein providing the material comprises providing a substrate and disposing an opaque material over the substrate, wherein patterning the material comprises patterning the opaque material.
11. (Withdrawn) The method according to Claim 10, further comprising forming at least one phase-shifting region over a portion of the substrate.
12. (Withdrawn) The method according to Claim 8, further comprising providing a look-up table, the look-up table including a plurality of fringe patterns for light sources, wherein creating the holographic representation of the image comprises referring to the look-up table.

13. (Withdrawn) The method according to Claim 8, wherein creating the holographic representation of the image comprises partitioning the image to a plurality of areas, and creating a holographic representation of each area.
14. (Withdrawn) The method according to Claim 8, wherein providing the material comprises providing a liquid crystal display or a special light modulator.
15. (Original) A method of patterning a target, comprising:
providing a target, the target having a top surface, the target top surface having a material layer disposed thereon, a first photoresist layer disposed over the material layer, a transparent spacer material disposed over the first photoresist layer, and a second photoresist layer disposed over the spacer material; and
patterning the second photoresist layer of the target with a holographic fringe representation of an image.
16. (Original) The method according to Claim 15, further comprising using the second photoresist layer to pattern the first photoresist layer with the image.
17. (Original) The method according to Claim 16, further comprising using the first photoresist layer to pattern the material layer of the target with the image.
18. (Original) The method according to Claim 15, further comprising:
providing a lithography reticle, the reticle comprising a pattern of transparent regions and opaque regions, the pattern comprising the holographic fringe representation of an image to be patterned on the material layer of the target; and

using the lithography reticle to pattern the second photoresist layer of the target with the holographic fringe representation of the image.

19. (Original) The method according to Claim 18, wherein the lithography reticle is transmissive, wherein using the lithography reticle to pattern the second photoresist layer of the target comprises exposing the second photoresist layer to an energy source through the reticle.

20. (Original) The method according to Claim 18, wherein the lithography reticle is reflective, wherein using the lithography reticle to pattern the second photoresist layer of the target comprises reflecting energy emitted from an energy source to the second photoresist layer.

21. (Original) The method according to Claim 18, wherein the holographic fringe representation of the image comprises a plurality of small apertures, wherein the apertures do not visually resemble the image in a one-to-one relationship.

22. (Original) The method according to Claim 18, wherein providing a lithography reticle comprises providing a reticle comprising phase-shifting regions.

23. (Original) The method according to Claim 15, wherein the target comprises a semiconductor wafer.

24. (Original) A semiconductor device patterned according to the method of Claim 23.

25. (Original) A method of patterning a target, the method comprising:

providing a target, the target having a top surface, the target top surface having a photoresist layer disposed thereon;

providing a lithography reticle, the lithography reticle comprising a holographic

representation of an image to be patterned on the target;

 patterning the photoresist layer with a three-dimensional pattern using the lithography reticle;

 depositing a material layer over the photoresist layer; and

 removing the photoresist layer, leaving three-dimensional structures comprised of the material layer disposed over the target.

26. (Original) The method according to Claim 25, further comprising using a two-photon process to pattern the photoresist layer.

27. (Original) The method according to Claim 25, wherein the three-dimensional structures comprise dual-damascene structures.

28. (Original) The method according to Claim 25, wherein the three-dimensional structures comprise a multi-level interconnect structure.

29. (Original) The method according to Claim 28, wherein the target comprises a semiconductor wafer.

30. (Canceled)